NONLETHAL APPROACHES TO POCKET GOPHER (THOMOMYS SPP.) CONTROL

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Field Rodent Symposium Sponsored by WRCC95

DECEMBER 7 & 8, 1993
RENO, NEVADA

Abstract:

A variety of nonlethal approaches to reduce gopher damage are being investigated, including systemic and contact repellents, physical barriers, and habitat modification. Denatonium benzoate (DB) was applied to seedlings at planting on the Mt. Hood National Forest in northcentral Oregon. DB appears to offer only slight protection with seedling damage and mortality rates of 44% (controls), 38% (DB tablets placed in root wad at planting), and 31% (DB tablet plus DB spray on roots and tops). Other studies show mixed results with DB. One problem may be poor uptake by plants undergoing moisture stress as there was high natural mortality rates of seedlings. Other repellents such as predator odors and native plant derivatives are being investigated as contact repellents.

Physical barriers around seedling roots and tops has helped reduce initial seedling damage and mortality in a study at the Mt. Hood National Forest. Losses of control seedlings after 6 months to gophers was 55%, but only 23% to seedlings in heavy plastic mesh tubes, 26% in light weight plastic mesh tubes, and 11% in moderate weight sandpaper tubes. The sandpaper tubed seedlings, however, suffered heavy non-animal mortality (>90%) from constriction and/or heat build up in the tubes. A second trial in underway at the Rogue River National Forest in southern Oregon, but initial gopher damage levels have been low even on unprotected (control) seedling. Most damage in that area usually occurs during winter. The sandpaper tubed seedlings there have also suffered high levels of non-animal mortality.

Habitat modification by sheep grazing is also being investigated in southcentral Washington for its ability to reduce gopher populations. The sheep are being used to reduce vegetation on clearcuts and shelterwood units that competes with conifer seedlings. Densities were equally high (about 9-10 gophers per acre) for enclosures (no grazing) and cattle-grazed areas; whereas densities were considerably lower (about 3 per acre) on areas intensively grazed by sheep. Analyses of food habits by the gophers and sheep are underway. Herbicides and prescribed burning are other ways to modify habitat that may reduce gopher numbers.